

ENGLISH ON NETWORKS

网络英语

张筱华 石方文 编著



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网 络 英 语

张筱华 石方文 编著

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内 容 简 介

本书共 19 个单元。内容涉及到几个方面:(1)计算机基础;(2)联网技术,这包括 ISO 联网标准、各层部件、LAN、TCP/IP 协议和 Internet;(3)近年来出现的与网络相关的新技术,如无线局域网、流媒体等;(4)网络安全技术,如防火墙等。不难看出,这些课文基本覆盖了当代与计算机网络有关的所有新技术领域。

本书读者范畴应包括计算机专业的本(专)科学生和从事计算机网络技术的科技人员,适用于大专院校、成人学历教育和职工继续教育等。

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编者的话

为了适应我国信息技术产业飞速发展的新形势,提高工程技术人员的专业英语水平,我们编写了这本《网络英语》。

撰写《网络英语》的想法源于《通信英语》。1994年,由我们执笔的第一版《通信英语》问世。十年来,《通信英语》一版再版,发行量高达数十万册,获得了方方面面很高的评价,的确令人始料不及。而正好是在这十年里,中国的互联网(Internet)从开始建设到飞速发展,网络已深入到社会的各个角落。由于网络,特别是由于互联网及其协议簇 TCP/IP 的存在和应用,人们才从计算机这个窗口看到了整个五彩斑斓的世界。因此,在构思这本教材的时候,我们就将它定位在计算机网络技术和计算机通信技术的基础上。现在再综观全书,更感通篇充满着“网络”的气息,所以考虑再三,最后将其定名为“网络英语”。这样,我们先后编写的《通信英语》、《信息英语》和《网络英语》就形成了一个专业英语教材系列,以供各类读者的选用。

本书共 19 个单元。内容涉及到几个方面:(1)计算机基础;(2)联网技术,这包括 ISO 联网标准、各层部件、LAN、TCP/IP 协议和 Internet;(3)近年来出现的与网络相关的新技术,如无线局域网、流媒体等;(4)网络安全技术,如防火墙等。不难看出,这些课文基本覆盖了当代与计算机网络有关的所有新技术领域。

考虑到读者学习过公共英语,已具有一定的英语基础,所以本书的编写是以扩大计算机网络方面的英语词汇量、熟悉专业术语、了解科技文章的表达特点和掌握英语翻译技巧为宗旨的。我们认为,只要读者能熟练地阅读和翻译本书的课文,看一般的网络技术英语文章就不会再感到费力。

本书在结构上分为三个部分,即教学大纲、主要语法现象和课文。主要语法现象对科技英语中最常见的语法现象进行了总结。在

每篇课文中,都含有课文(正文)、生词、注释、练习和课文的参考译文。

本书读者范畴应包括计算机专业的本(专)科学生和从事计算机网络技术的科技人员,适用于大专院校、成人学历教育和职工继续教育等。

衷心希望本书的出版能为我国 IT 业的发展,为信息产业职工素质的提高,为我国高等教育的发展做出贡献。

北京邮电大学
张筱华 教授
2004 年 2 月 6 日

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第一部分

教学大纲

《网络英语》教学大纲

一、目的

随着我国通信信息产业的迅猛发展,提高工程技术人员的专业英语水平已成为当务之急。设置《网络英语》课程,就是为了扩展学生在计算机网络专业方面的英语词汇量,熟悉该领域的专业术语,了解科技英语的表达特点和掌握专业英语的翻译技巧,从而提高他们的业务素质并增强他们在专业上与国际接轨的能力。

二、基本内容

《网络英语》共 19 个单元。内容主要涉及:(1)计算机基础;(2)联网技术,包括 ISO 联网标准、各层部件、TCP/IP 协议、LAN 和 Internet;(3)近年来出现的与网络相关的新技术,如无线局域网、流媒体等;(4)网络安全技术,如防火墙等。不难看出,这些课文基本覆盖了当代与计算机网络有关的所有新技术领域。

《网络英语》的课文主要选自美国的大学教材和一些高级别的通信技术刊物。这些课文语言朴实,文字流畅,易于阅读和理解。由于文章作者不同,写作风格各异,语法现象也各有侧重,因而对于学生专业英语水平的提高,必定会有所帮助。

三、教学要求

1. 词汇要求

- 对课文中出现的词汇能说出其汉语词义;
- 对课文中常见的通信专业词组要能够英汉互译,并要求拼写正确。

2. 语法要求

应熟练掌握下述常见的语法现象:

- 动词不定式
- 动名词
- 现在分词
- 过去分词

- 被动语态
- 常用介词
- 各类从句

3. 阅读要求

能读懂课文或与课文难易程度相当的课外(网络专业)英语材料,生词不超过所读材料词数的2%,速度达每分钟30个词,理解基本正确。

4. 翻译要求

能将阅读的材料译成汉语,译文应文字通顺,意思基本正确,笔译速度达到每小时500个英语单词。

5. 听、说和写作要求

暂不作考试要求。

四、学习方法

1. 要认真掌握一些常见的语法现象

一些语法现象在专业英语文章中出现的频度很高,例如: The signal received from a satellite, located in far outer space, is very weak.

在这个很短的句子中,过去分词就出现过两次。因此,建议应考者在第一次遇到这类语法现象时,就应该将其作用和翻译方法真正掌握,这样才能将文章理解好,翻译好。

2. 要掌握一些常见的词头、词干和词尾

词干是一个词的躯体,是不变化的部分,体现了该词的基本含义;词头是词干之前的部分,它能赋予该词干以新的词义,派生新词;词尾是词干之后的部分,它也能赋予该词干以新的词义,派生新词。所以,掌握了常用的词干、词头和词尾,就能大大地扩展自己的词汇量。

例如,英语中的-duc-或-duct-都是词干,该词干的意义为“引导”,如果配以不同的词头和词尾,便衍生出许多英语单词,例如:

conduct *v.* 传导

conductor *n.* 导体

deduce *v.* 推演

deduct *v.* 扣除;演绎

induce *v.* 引起;引诱

inductance *n.* 电感

introduce *v.* 引入;介绍

produce *v.* 生产

reduce *v.* 减少

reproduce *v.* 再生产

再例如, trans-是一个词头, 该词头的意义是“横过、跨过、贯通”, 因而不难判断下述生词的意思:

transcontinental *a.* 横跨大陆的

transfer *v.* 转移; 转换; 传送

transmit *v.* 发送; 传输

transmitter *n.* 发送器; 发信机

transport *v.* 运输; 运送

translate *v.* 转换; 翻译

transplant *v.* 移植; 移种

transform *v.* 转换; 变换

3. 要精读课文

教材中所选的许多课文都是较典型, 地道的专业英语文章。这些文章文字用词严谨, 语法现象规范, 专业词组出现频度很高。因此, 只要认真地精读几篇文章, 即不仅将语法弄懂弄通, 而且将词汇熟记在心, 则英语水平就会大有长进。

五、考试

考试方式建议闭卷, 笔试, 考试时间为 2 小时。不允许查字典。

评分用百分制, 60 分为及格。

六、参考书目

张道真. 实用英语语法(第三次修订本). 商务印书馆, 1992

新英汉词典. 上海译文出版社, 1988

张筱华, 石方文. 通信英语. 第四版. 北京邮电大学出版社, 2004

张筱华. 信息英语. 第一版. 北京邮电大学出版社, 2004

第二部分

主要语法现象

《网络英语》主要语法现象

一、动名词

作用相当于名词,它在句子中可作主语、宾语或介词宾语。例如:

1. Reading is a good habit.

动名词在句子中作主语。

2. I enjoy working with you.

动名词在句子中作宾语。

3. I am interested in reading.

动名词在句子中作介词宾语。

动名词的作用虽然相当于名词,但它仍然具有一些动词的特征。例如,它可以有自己的宾语和状语。例如:

4. I am interested in carefully reading books.

5. He insisted on doing it in his own way.

6. What would you suggest for overcoming the difficulties?

在《网络英语》中,动名词的应用相当普遍,我们来看下面的例子:

7. Digital transmission provides a powerful method for overcoming noisy environments.

8. Consequently there is an inherent advantage for overcoming noisy environments by choosing digital transmission.

9. The telephone contains a transmitter and receiver for converting back and forth between analog voice and analog electrical signals.

二、现在分词

1. 现在分词一般作形容词用,可修饰动作的发出者,有主动的意义。可译成“……的……”,此时多作定语。例如:

- (1) The smiling girl is Wangling.

- (2) This is an amusing story.

在更多情况下,我们可以用现在分词短语作定语,在意思上和一个定语从句差不多。例如:

- (3) The girl standing by the window talked to her friend.
- (4) There are a lot of boys on the sports ground playing football.
- (5) They built a highway leading into the mountains.

在《网络英语》中,现在分词的应用相当普遍,我们来看下面的例子:

- (6) Furthermore, we shall prove that a minimum theoretical sampling frequency of order 6.8 kilohertz is required to convey a voice channel occupying the range 300 Hz to 3.4 kHz.
- (7) Thus the output to the codec may be seen as a sequence of 8 pulses relating to channel 1, then channel 2, and so on.
- (8) Fig. 3-1 illustrates a typical full-duplex data transmission system including the originating data processing equipment and the interface assembly which consists of buffer and control units.
- (9) In addition to defining standards covering the NNI, CCITT also embarked on a series of standards governing the operator of synchronous multiplexers and SDH network management.
- (10) The unquestionable success of the first generation of paging systems using wired networks with signaling devices was followed in the early 1950s by technological progress in the miniaturization of electronic circuitry.

2. 现在分词(分词短语)还可以作状语,用来表示方式、目的、条件、结果和背景等等;有时表示主语在做一动作的同时还进行的另一动作,此时称之为伴随状态。例如:

- (1) Every evening they sit in sofa watching TV.
现在分词起伴随作用。

- (2) I read the English book, using my dictionary.
现在分词表示条件或背景。

我们可列出更多的例子:

- (3) I ran out of the house shouting.
- (4) I got home, feeling very tired.
- (5) Not knowing her address, we couldn't get in touch with her.
- (6) She got to know them while attending a conference in Beijing.
- (7) By comparison, most other forms of transmission systems convey the message information using the shape, or level of the transmitted signal; parameters that are most easily affected by the noise and attenuation introduced by the transmission path.

- (8) At the receiving end of an asynchronous serial data link, the receiver continually monitors the line looking for a start bit.
- (9) Generally, this link has lower capacity than the total number of PBX subscribers, reflecting the fact that, at any given time, only a fraction of the subscribers will be engaged in external calls.
- (10) Today, certain models of pagers are even equipped with a display capability of providing optical messages consisting of 10 to 80 characters, and thus substantially increasing the efficiency of the system.

三、过去分词

1. 过去分词(短语)一般作形容词用,可修饰动作的对象,有被动的意义。可译成“被……的……”或“由……的……”,此时多作定语。例如:

- (1) The trees planted by me have grown up.
- (2) We've already met the target set in the program.
- (3) What's the language spoken in this area?
- (4) Suddenly there appeared a young woman dressed in green.
- (5) For example, the signal received from a satellite, located in far outer space, is very weak and is at a level only slightly above that of the noise.
- (6) Once the start bit has been detected, the receiver waits until the end of the start bit and then samples the next N bits at their centers, using a clock generated locally by the receiver.
- (7) Paging solutions to the above communication situations were introduced in the first half of this century by means of simple optical and acoustical signaling devices installed on the premises of enterprises, hospitals, offices, etc.
- (8) The ideal mobile telephone system would operate within a limited assigned frequency band and would serve an almost unlimited number of users in unlimited areas.
- (9) This is actually a collection of national networks interconnected to form an international service.
- (10) In addition to the five classes of switching centers listed above, the network is augmented with additional switching nodes called tandem switches.

2. 过去分词还可以作状语,例如:

- (1) Although originally designed and implemented to service analog telephone subscribers, it handles substantial data traffic via modem, and is gradually being converted to a digital network.
- (2) Compared with you, we still have a long way to go.
- (3) Moved by their speech, we were momentarily at a loss what to say.
- (4) He returned us the papers uncorrected.

四、动词不定式

在《网络英语》中,动词不定式大量地用来作状语或定语。

1. 动词不定式在句首或句末常常用来表示目的,可译成“为了……”,“以便……”,可见这时候起状语作用。例如:

- (1) To do a good job, we use good tools.
- (2) We use good tools to do a good job.
- (3) We must do everything we can to help them.

由于英语中常用被动语态,所以上面的例(2)可表示为:

- (4) Good tools are used to do a good job.

注意,此例中的下划线部分,这类句型在《网络英语》中大量出现。例如:

- (5) A circuit of the demultiplexer is arranged to detect the synchronization word, and thereby it knows that the next group of 8-digits corresponds to channel 1.
- (6) Furthermore, we shall prove that a minimum theoretical sampling frequency of order 6.8 kilohertz is required to convey a voice channel occupying the range 300 Hz to 3.4 kHz.
- (7) As each incoming bit is sampled, it is used to construct a new character.
- (8) Timing signals from the interface assembly at the transmitter are applied to the data modem to synchronize the computer and the data set.
- (9) The switching centers are linked together by trunks. These trunks are designed to carry multiple voice-frequency circuits using either FDM or synchronous TDM.
- (10) The 10 regional centers are meshed together to provide full connectivity.

2. 动词不定式在名词之后常用来表示定语,译成“……的……”。例如:

- (1) She usually has a lot of meetings to attend in the evenings.
- (2) I want to get something to read during the vacation.

- (3) She was the first person to think of the idea.
- (4) This will be a good opportunity to exchange experience.
- (5) The operator of a local telephone switchboard had an option to transmit an optical or acoustical signal for the searched person over a wired network.
- (6) Why 800 MHz? The FCC's decision to choose 800 MHz was made because of severe spectrum limitations at lower frequency bands.
- (7) Any communication systems which can provide customers with means to communicate from any place, at any time and at any distance gives social and economic advantages.

五、一个重要的语法现象——被动语态

被动语态在《网络英语》中被大量使用,这里给出几个例子:

- 1. If we consider binary transmission, the complete information about a particular message will always be obtained by simply detecting the presence or absence of the pulse.
- 2. Noise can be introduced into transmission path in many different ways, perhaps via a nearby lightning strike, the sparking of a car ignition system, or the thermal low-level noise within the communication equipment itself.
- 3. An asynchronous serial data link is said to be character oriented, as information is transmitted in the form of groups of bits called characters.
- 4. When the received character has been assembled, its parity is calculated and compared with the received parity bit following the character.
- 5. The first low-loss silica fiber was described in a publication which appeared in October of 1970. The date of this publication is sometimes cited as the beginning of the era of fiber communication.

当然,在《网络英语》中还有许多其他重要的一些语法现象,请读者参阅作者建议的相关书籍,这里不再一一赘述。